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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Arasappan *et al.*

Serial No.: 09/909,077

Group Art Unit: 1653

Filed: July 19, 2001

Examiner: David Lukton

For: NOVEL IMIDAZOLIDINONES AS NS3-SERINE PROTEASE INHIBITORS OF
HEPATITIS C VIRUS

MARKED-UP AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The present Marked-Up amendment shows all changes made to the specification
in the enclosed Amendment.

(1) Please replace the last paragraph of page 67 with the following:

Assay for HCV Protease Inhibitory Activity:

Spectrophotometric Assay: Spectrophotometric assay for the HCV serine protease was performed on the inventive compounds by following the procedure described by R. Zhang *et al*, *Analytical Biochemistry*, 270 (1999) 268-275, the disclosure of which is incorporated herein by reference. The assay based on the proteolysis of chromogenic ester substrates is suitable for the continuous monitoring of HCV NS3 protease activity. The substrates were derived from the P side of the NS5A-NS5B junction sequence (Ac-DTEDVVX(Nva) (SEQ ID NO: 1), where X = A or P) whose C-terminal carboxyl groups were esterified with one of four different chromophoric alcohols (3- or 4-nitrophenol, 7-hydroxy-4-methyl-coumarin, or 4-phenylazophenol). Presented below are the synthesis, characterization and

(2) Please replace the second paragraph of page 70 with:

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Evaluation of Inhibitors and Inactivators: The inhibition constants (K_i) for the competitive inhibitors Ac-D-(D-Gla)-L-I-(Cha)-C-OH (27) (SEQ ID NO: 2), Ac-DTEDVVA(Nva)-OH (SEQ ID NO: 3) and Ac-DTEDVVP(Nva)-OH (SEQ ID NO: 4) were determined experimentally at fixed concentrations of enzyme and substrate by plotting v_o/v_i vs. inhibitor concentration ($[I]_o$) according to the rearranged Michaelis-Menten equation for competitive inhibition kinetics: $v_o/v_i = 1 + [I]_o / (K_i (1 + [S]_o / K_m))$, where v_o is the uninhibited initial velocity, v_i is the initial velocity in the presence of inhibitor at any given inhibitor concentration ($[I]_o$) and $[S]_o$ is the substrate concentration used. The resulting data were fitted using linear regression and the resulting slope, $1/(K_i(1+[S]_o/K_m))$, was used to calculate the K_i^* value.

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